STATUS REPORT NO. 1

April 1, 1964 through September 30, 1964

on

NASA GRANT NO. NsG-690

from
The Laboratory for Astrophysics and Space Research
The Enrico Fermi Institute for Nuclear Studies
University of Chicago
Chicago, Illinois 60637

(January 5, 1965)

Submitted by

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1. Status of the Programming and Data Processing Effort
for the Mariner-C Cosmic Ray Telescope

1. The Reduction and Analysis of Data from Pre-launch Testing

The test program procedure, and data analysis required for it was worked out in consultation with JPL. After several compromises a suitable data format with acceptable content was worked out. The final form of the data so agreed upon has been used as the primary source of data for analysis in the pre-launch phase of this program.

Several computer programs were written by this group, both for our own use and for use by JPL, to perform the analysis of test data from Mariner-C. Programs were necessary to reduce data generated both through the JPL OSE and the University of Chicago GSE. The major programs in this category, all of which are, or have been, in fully operational status, are:

A. GSE test data reduction on the IBM 1620 (now obsolete).

B. GSE test data reduction on the SDS 910 (current).

C. OSE test data reduction on the IBM 7094 (current).

Several versions of the last program have been prepared; the original version was written to operate under the UC systems (non-IBSYS.) This was modified, for the use of JPL on their system, to operate under IBSYS, and, after having undergone several levels of modification to accommodate to changes in the OSE output format, is now the current version for use at both JPL and UC.

All known pre-launch test data reduction has been completed, using

the IBM 1620 (prior to 6/64) or SDS 910 (after 6/64) for reduction of GSE-prepared tapes, or the U of C or JPL IBM 7094's for reduction of CSE-generated data.

2. Preparation for Reduction and Analysis of Post-launch Experimental Data

Acceptable experimenter's data tape and "quick-look" formats have been worked out and agreed upon with JPL. Programs based upon these formats (our "quick-look" or first-pass processing) have been written and debugged. Several input and rate computations changes must be made in these programs to accommodate to recent modifications in JPL's "page 2" format tapes. The priority for making these changes has been lowered to allow available personnel to prepare programs for the analysis of existing data from Mariner-C (1). The study of the requirements for data processing of post-launch data from the Mariner Program has been completed, and basic procedures for the primary reduction of the proposed experimenter's data tapes have been worked out. Implementation of these procedures has not yet been initiated. It is anticipated that a large part of any data processing procedure still to be implemented for the Mariner-C experiments will be able to draw upon a growing library of rather specialized routines developed in this laboratory for other space experiments.

The "failure-mode" program mentioned in the above paragraph - one designed to retrieve all possible information from the data received during the Mariner-C (1) experiment - has been completed. The first results from this data are now available to the experimenters.

II. Financial Report

A financial report covering the report period will be submitted by the Comptroller of the University of Chicago.